

MOSQUITO RECORDS FROM IDAHO

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This report is based on a study of the mosquitoes taken in Idaho by personnel of the U. S. Public Health Service, Malaria Control in War Areas, and specimens in the insect collections of the University of Utah and the Utah State Agricultural College. The study may be considered as preliminary, since collections have not been made in all parts of the state. However, it is believed that the material examined has been sufficient to give a rather accurate index to the mosquito fauna of Idaho. In attempting to make the lists as complete as possible all additional records from the works of Dyar, and others that have come to the attention of the writers, have been included.

The specimens examined were collected by means of a portable light trap; by hand while feeding; in a sweeping net; in resting shelters; and a few were reared from larvae. In this report the collection records are arranged alphabetically by county.

The writers are indebted to Dr. G. F. Knowlton, Utah State Agricultural College, and to personnel of the State of Idaho Department of Public Health for providing a number of records. Unless otherwise indicated collections were by L. E. Perry, or F. C. Harmston, U. S. Public Health Service.

LIST OF SPECIES RECORDED

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| 1. <i>Aedes campestris</i> Dyar & Knab. | 10. <i>Aedes increpitus</i> Dyar. |
| 2. <i>Aedes canadensis</i> (Theobald). | 11. <i>Aedes lateralis</i> (Meigen). |
| 3. <i>Aedes cataphylla</i> Dyar. | 12. <i>Aedes nigromaculis</i> (Ludlow). |
| 4. <i>Aedes cinereus</i> Meigen. | 13. <i>Aedes niphadopsis</i> Dyar & Knab. |
| 5. <i>Aedes dorsalis</i> (Meigen). | 14. <i>Aedes pullatus</i> (Coquillett). |
| 6. <i>Aedes excrucians</i> (Walker). | 15. <i>Aedes sticticus</i> (Meigen). |
| 7. <i>Aedes fitchii</i> (Felt & Young). | 16. <i>Aedes stimulans</i> (Walker). |
| 8. <i>Aedes flavescens</i> (Müller). | 17. <i>Aedes triseriatus</i> (Say). |
| 9. <i>Aedes idahoensis</i> (Theobald). | |

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| 18. <i>Aedes trivittatus</i> (Coquillett). | 26. <i>Culiseta impatiens</i> (Walker). |
| 19. <i>Aedes vexans</i> (Meigen). | 27. <i>Culiseta incidens</i> (Thomson). |
| 20. <i>Culex apicalis</i> Adams. | 28. <i>Culiseta inornata</i> (Williston). |
| 21. <i>Culex erythrothorax</i> Dyar. | 29. <i>Culiseta morsitans</i> (Theobald). |
| 22. <i>Culex pipiens</i> Linnaeus. | 30. <i>Anopheles freeborni</i> Aitken |
| 23. <i>Culex restuans</i> Theobald. | 31. <i>Anopheles occidentalis</i> Dyar & Knab. |
| 24. <i>Culex salinarius</i> Coquillett. | 32. <i>Anopheles punctipennis</i> (Say). |
| 25. <i>Culex tarsalis</i> Coquillett. | |

AEDES CAMPESTRIS DYAR AND KNAB

This mosquito was observed in greatest abundance in the southeastern section of the state, particularly in areas where alkaline pools are present. Collections made near Burley and Boise indicate a rather wide distribution of this species across the southern half of the state, wherever suitable breeding places occur. It is an early-season, one-brooded species, appearing in greatest abundance during June.

Ada County: Boise, June 28, 1495. Bannock County: Arimo and Swan Lake, June 29, 1945. Bear Lake County: Bear Lake, June 1, 1929 (W. J. Gertsch); Fish Haven, June 1, 1930 (Rees); Paris, June 2, 1930 (Rees). Butte County: Arco, June 9, 1938 (Rees). Cassia County: Burley and Malta, June 26, 1945. Franklin County: Preston, July 2, 1934 (Rees). Oneida County: Malad, May 7, 1934 (Rees). Twin Falls County: Twin Falls, May 5, 1934 (Rees).

AEDES CANADENSIS (THEOBALD)

This species was collected in the southwestern part of the state, in wooded areas along the larger streams.

Canyon County: Caldwell and Nampa, June 27, 1945. Gem County: Emmett, June 26, 1945.

AEDES CATAPHYLLA DYAR

To date this species has been collected only in the eastern half of the state, in or near the mountains, but it undoubtedly occurs in other parts of Idaho.

Custer County: Mackay, June 10, 1938 (Rees). Fremont County: Big Spring, July 5, 1934 (Rees) and June 10, 1936 (G. F. Knowlton).

Aedes cinereus Meigen

This small, dark mosquito was obtained in a number of collections in the southeastern part of Idaho and also in Owyhee County, indicating a wide distribution across the southern half of the state. It has been reported as a single-brooded species, but collections made in Idaho suggest several broods or at least continuous breeding over a large part of the season. *Cinereus* was observed to bite persistently in the shaded places along many of the smaller streams.

Bannock County: Arimo, July 11, 1945; Swan Lake, June 29, 1945. Bear Lake County: Fish Haven, June 28, 1933 (Rees); Montpelier, September 11, 1945. Bingham County: Blackfoot, July 2, 1934 (Rees). Franklin County: Preston, June 29, 1945. Owyhee County: Marsing, June 27, 1945.

Aedes dorsalis (Meigen)

This is probably the most important pest mosquito in Idaho. It was present in considerable abundance in nearly all localities where collections were made and it was observed from early season until late fall in all types of habitats except in the higher mountain areas. This species bites persistently out-of-doors during the daytime and will frequently invade houses when seeking a blood meal. It has been taken by the writers at several localities on numerous occasions from 1930 to 1945 in the following counties: Ada, Bannock, Bear Lake, Bingham, Blaine, Butte, Canyon, Cassia, Custer, Franklin, Fremont, Gooding, Jerome, Madison, Minidoka, Oneida, Owyhee and Twin Falls.

Aedes excrucians (Walker)

Bannock County: Pocatello, June 29, 1945. Fremont County: Big Spring, July 5, 1934 (Rees).

Aedes fitchii (Felt and Young)

This species was observed frequently in the lower mountain and foothill areas during early season. Several collections of *fitchii* were made in the valley regions where it was associated with *Aedes increpitus*, breeding in clear, overflow pools along the larger streams.

Ada County: Boise, June 28, 1945. Bannock County: Pocatello, June 29, 1945. Bear Lake County: Fish Haven, July 11,

1945. Bingham County: Blackfoot, July 2, 1934 (Rees). Custer County: Mackay, June 10, 1934 (Rees). Franklin County: Franklin, July 9, 1931 (J. S. Stanford); Preston, July 29, 1945. Fremont County: St. Anthony, July 6, 1933 (Rees). Kootenai County: Cœur d' Alene, August 17, 1937 (Rees). Minidoka County: Rupert, June 26, 1945.

AEDES FLAVESCENS (MÜLLER)

Collected across the southern half of the state, but was not common in any locality visited.

Bear Lake County: Bear Lake, June 1, 1929 (Gertsch); Fish Haven, August 11, 1929 (Rees). Canyon County: Nampa, June 27, 1945. Minidoka County: Rupert, June 25, 1945.

AEDES IDAHOENSIS (THEOBALD)

This mosquito was observed in numerous localities in the southeastern part of Idaho, where it constitutes an important pest species because of its tendency to bite during the daytime in shaded or open areas. It is most abundant during spring and early summer.

Bear Lake County: St. Charles, July 5, 1935 (Knowlton). Bingham County: Blackfoot, July 11, 1945. Cassia County: Burley and Malta, June 26, 1945. Custer County: Mackay, June 10, 1938 (Rees). Franklin County: Preston, July 2, 1934 (Rees). Fremont County: Big Spring, July 5, 1934 (Rees), June 10, 1936 (Knowlton); St. Anthony, July 6, 1933 (Rees). Oneida County: Malad, May 7, 1934 (Rees).

AEDES INCREPITUS DYAR

This is one of the more common, early-season species. It was found breeding in overflow pools along streams, particularly in the foothill regions. The females bite persistently during the daytime in shaded localities when opportunity affords.

Ada County: Boise, June 28, 1945. Bannock County: Arimo, June 29, 1945; Pocatello, July 11, 1945. Canyon County: Nampa, June 27, 1945. Cassia County: Malta, June 25, 1945. Franklin County: Preston, June 29, 1945. Latah County: Juliaetta, April 21, 1889 (J. M. Aldrich). Minidoka County: Rupert, June 26, 1945. Oneida County: Malad, June 26, 1945. Owyhee County: Marsing, June 27, 1945.

Aedes lateralis (Meigen)

This mosquito was taken by the writers only in the extreme western part of the state. Dyar reports it from Lewiston, near the Oregon state line. Mail refers to this species as *Aedes aldrichii* and considers it one of the dominant species of the state.

Canyon County: Caldwell, June 27, 1945. Latah County: Lewiston, June 16, 1902 (Aldrich).

Aedes nigromaculis (Ludlow)

This may be regarded as one of the more important pest species of the state, since it attacks persistently during the daytime, inflicting a painful bite. It was found widely distributed over the southern half of Idaho, and further collections will probably show it to be state-wide in distribution, except for the higher mountain areas. Breeding is apparently continuous throughout the season.

Ada County: Boise, August 14, 1945. Bannock County: Arimo, July 11, 1945. Bear Lake County: Fish Haven, August 11, 1929 (Rees); Montpelier, September 11, 1945. Bingham County: Blackfoot, July 11, 1945. Canyon County: Caldwell, August 17, 1945; Nampa and Wilder, June 27, 1945. Cassia County: Malta, August 19, 1945. Franklin County: Riverdale, September 9, 1934 (Knowlton). Gem County: Emmett, August 17, 1945. Owyhee County: Marsing, June 27, 1945.

Aedes niphadopsis Dyar and Knab

This species breeds in greatest numbers in shallow, alkaline pools in valley areas or along the lower foothills. It was taken only in the southcentral and southeastern parts of the state.

Bear Lake County: Fish Haven, June 1, 1930 (Rees). Cassia County: Burley, June 26, 1945. Franklin County: Preston, July 2, 1934 (Rees). Oneida County: Malad, May 7, 1934 (Rees).

Aedes pullatus (Coquillett)

Latah County: Juliaetta, April 21, 1889 (Aldrich).

Aedes sticticus (Meigen)

This species was found to be fairly numerous in shaded localities along the larger streams in the southern half of Idaho. The

females bite during the daytime in such localities but they were not observed to leave shaded places and seek blood meals during the daytime.

Ada County: Boise, June 28, 1945. Canyon County: Wilder, June 27, 1945. Cassia County: Malta, June 26, 1945. Franklin County: Preston, June 29, 1945. Oneida County: Malad, June 25, 1945. Dyar reports *sticticus* from Sandpoint, Bonner County, July 3, 1917.

AEDES STIMULANS (WALKER)

This mosquito was found associated with the preceding species in shaded places along streams. The females bite severely during the daytime, particularly during cloudy weather.

Canyon County: Wilder, June 28, 1945. Franklin County: Preston, June 29, 1945. Oneida County: Malad, June 26, 1945.

AEDES TRISERIATUS (SAY)

Canyon County: Nampa, June 27, 1945.

AEDES TRIVITTATUS (COQUILLET)

This species was taken during the daytime while biting in shaded places. The females inflict a painful bite and are extremely persistent when seeking blood meals.

Canyon County: Nampa, June 27, 1945. Owyhee County: Marsing, June 27, 1945.

AEDES VEXANS (MEIGEN)

This mosquito probably ranks next in importance to *dorsalis* as a pest mosquito in Idaho. It occurs in nearly all types of habitats and can be found from early summer until fall. The females will invade dwellings where they feed avidly during the night. They are also extremely annoying during the daytime in certain wooded localities. Collections have been made by the writers at several localities from 1929 to 1945 in the following counties: Ada, Bear Lake, Bannock, Bingham, Blaine, Canyon, Custer, Franklin, Owyhee and Twin Falls. Dyar reports it from Bonner County.

CULEX APICALIS ADAMS

This small, dark mosquito was taken at one locality along the

Payette River, resting beneath a bridge. The females were not observed to feed upon humans.

Gem County: Emmett, August 17, 1945.

CULEX ERYTHROTHORAX DYAR

Canyon County: Nampa, August 17, 1945.

CULEX PIPIENS LINNAEUS

This species may be regarded as an important indoor pest mosquito in certain parts of Idaho. It enters houses freely, often causing considerable annoyance, particularly during the latter part of the season.

Ada County: Boise, August 16, 1945. Bingham County: Blackfoot, July 11, 1945; Shelley, September 7, 1945. Canyon County: Caldwell and Nampa, August 17, 1945. Cassia County: Burley and Malta, June 26, 1945. Franklin County: Preston, July 11, 1945. Madison County: Rexburg, September 8, 1945; Rigby, September 7, 1945. Minidoka County: Rupert, August 16, 1945. Owyhee County: Marsing, June 27, 1945.

CULEX RESTUANS THEOBALD

This mosquito resembles the preceding species in general appearance and in its habit of entering dwellings. However, it appears to be less common and is not to be considered an important pest species in Idaho.

Ada County: Boise, August 16, 1945. Bingham County: Shelley, September 7, 1945. Cassia County: Burley, June 26, 1945. Madison County: Rigby, September 7, 1945. Twin Falls County: Twin Falls, August 20, 1945.

CULEX SALINARIUS COQUILLET

Ada County: Boise, August 16, 1945. Canyon County: Nampa, August 17, 1945. Oneida County: Malad, July 11, 1945.

CULEX TARSALIS COQUILLET

This species ranks high in importance as a pest mosquito in Idaho. It occurs throughout the season and enters houses freely, causing much annoyance. It was observed in tremendous numbers in stables, barns and other places where livestock were quartered and seems to prefer to feed upon domestic animals.

Collections were made by the writers from 1930 to 1945 at several localities in the following counties: Ada, Bannock, Bear Lake, Bingham, Blaine, Bonneville, Butte, Canyon, Cassia, Elmore, Franklin, Fremont, Gooding, Jerome, Kootenai, Madison, Minidoka, Oneida, Owyhee, and Twin Falls.

CULISETA IMPATIENS (WALKER)

Fremont County: Ashton, September 8, 1945.

CULISETA INCIDENS (THOMSON)

Ada County: Boise, August 16, 1945. Bannock County: Arimo and Pocatello, July 11, 1945. Bear Lake County: Montpelier, September 11, 1945; Paris, August 12, 1945. Bingham County: Blackfoot, July 2, 1934 (Rees). Canyon County: Caldwell, August 17, 1945; Nampa and Wilder, June 27, 1945. Franklin County: Preston, June 29, 1945. Minidoka County: Rupert, June 26, 1945. Dyar reports this species from Moscow, Latah County.

CULISETA INORNATA (WILLISTON)

This species is widely distributed and occurs throughout the season. Numerous collections have been made by the writers from 1929 to 1945 in the following counties: Ada, Bannock, Bear Lake, Bingham, Blaine, Butte, Canyon, Cassia, Franklin, Gooding, Jerome, Kootenai, Madison, Minidoka, Oneida, Owyhee and Twin Falls.

CULISETA MORSITANS (THEOBALD)

Specimens from which this record was taken were not examined by the authors.

Franklin County: Mink Creek, August 24, 1934 (Knowlton-C. F. Smith).

ANOPHELES FREEBORNI AITKEN

This malarial mosquito has been taken by the writers throughout the southern part of the state where it often occurs in great abundance in the vicinity of favorable breeding areas. It invades houses, particularly during the latter part of the season. Numerous collections have been made by the authors from 1930 to 1945 in the following counties: Ada, Bannock, Bear Lake, Bingham, Bonneville, Canyon, Cassia, Elmore, Franklin, Gooding, Jerome,

Madison, Oneida, Owyhee and Twin Falls. Luke reports it from Boise, Gem and Washington counties.

ANOPHELES OCCIDENTALIS DYAR AND KNAB

Fremont County: Ashton, September 8, 1945. Madison County: Rexburg and Rigby, September 7, 1945. Luke reports it from Kellogg, Shoshone County.

ANOPHELES PUNCTIPENNIS (SAY)

Fremont County: Ashton, September 8, 1945. It is reported by Luke from Boundary, Kootenai, Nez Perce and Shoshone counties.

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TWO NEW SPECIES OF PTILOGLOSSA FROM ARIZONA
(Hymenoptera, Apoidea)¹

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The Diphaglossine bees of South America have been represented in the United States by two species of *Caupolicana*, *C. yarrowi* (Cresson) in New Mexico and Arizona, and *C. electa*

¹Paper No. 543, University of California Citrus Experiment Station, Riverside, California.

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